

REMARKS

This Amendment responds to the Office Action dated February 8, 2006 in which the Examiner rejected claims 1-2, 8, 14-15 and 16 under 35 U.S.C. §102(b) and rejected claims 1-20 under 35 U.S.C. §103.

As indicated above, claim 5 has been incorporated into claim 1, claim 8 has been amended to incorporate claim 11 and claims 15 and 16 have been similarly amended. Applicants respectfully submit that the amendment is unrelated to a statutory requirement for patentability.

Claim 1 claims an image processor, claim 8 claims a print system, claim 15 claims a method of image processing and claim 16 claims a computer-executable program which processes a plurality of different types of input data and outputs the processed data to an image output device. A converter converts all the plurality of different types of input data to output data by processing the input data according to data type. An image combiner combines the data converted according to data type to generate an image data. A detector detects a specific pattern in the data after being combined by the image combiner. All the data converted by the first converter passes the detector.

Through the structure, method and program of converting all of the plurality of different types of input data, combining the converted data and then detecting a specific pattern in all the data combined by the combiner, as claimed in claims 1, 8, 15 and 16, the claimed invention provides an image processor which can accurately detect a specific pattern in an image even when various types of input data are processed. The prior art does not show, teach or suggest the invention as claimed in claims 1, 8, 15 and 16.

Claims 1-2, 8 and 14-16 were rejected under 35 U.S.C. §102(b) as being anticipated by *Yamagata et al* (U.S. Patent No. 5,917,619).

As indicated above, since claims 5 and 11 have been incorporated into the independent claims, applicants respectfully submit that the rejection to claims 1-2, 8 and 14-16 under 35 U.S.C. §102(b) no longer applies. Therefore, applicants respectfully request the Examiner withdraws the rejection to claims 1-2, 8 and 14-16 under 35 U.S.C. §102(b).

Claims 1-16, 18 and 20 were rejected under 35 U.S.C. §103 as being unpatentable over *Honma* (U.S. Patent No. 6,172,766) in view of *Owada et al* (U.S. Patent No. 6,108,098).

Honma appears to disclose an image processing method and apparatus for processing an image in accordance with an attribute of a drawing object. (Col. 1, lines 6-8). Data generated by various applications are constituted of a plurality of drawing objects in one page. Each object has one of the following attributes: i) Image; ii) Graphics; iii) Text. (Col. 1, lines 34-39). A flow chart illustrating a print process according to the first embodiment is shown in FIG. 1. Reference numeral 101 represents a host (PC), reference numeral 102 represents a printer, reference numeral 103 represents an application program, reference numeral 104 represents a drawing control system, reference numeral 105 represents a printer driver, and reference numeral 106 represents a spooler. Print job data created (generated) by the application 103 is sequentially passed to the drawing control system 104. The drawing control system 104 performs a drawing control of each page or each band, and is usually constituted of a system level program. The printer driver 105 converts a drawing object passed from the drawing control system 104 in the unit of object

into physical data capable of being printed with the printer 102, and passes the physical data to the spooler 106. (Col. 2, lines 41-57). In this embodiment, it is assumed that the printer 102 has a resolution of 600 dpi and the printer driver 105 creates data having a resolution of 600 ppi or 300 ppi in accordance with an attribute of a drawing object. (Col. 3, lines 20-23). Next, an example of the structure of the printer driver 105 will be described with reference to FIG. 4. An object discrimination unit 401 discriminates whether a drawing object passed from the drawing control system 104 is a gradation prominent object or a resolution prominent object, in accordance with logical information of the drawing object. If the object is a resolution prominent object, it is passed to a high resolution rasterizer 407, whereas if not, it is passed to a normal resolution rasterizer 402. The normal resolution rasterizer 402 rasterizes each object at 300 ppi to create a drawing image. This object drawing image is represented by a logical color space passed from the host. A color conversion unit 403 converts a color space of the object drawing image into a physical color space to be expressed with the printer 102. An image buffer 404 corresponds to one page generally called a band buffer and divided into a plurality of subsidiary fields. The image buffer 404 synthesizes an output of each drawing object from the color conversion unit 403 to form a drawing image to be sent to the printer. This synthesis is performed as a raster operation instructed by the drawing control system 104. (Col. 3, line 48 through col. 4, line 3). The high resolution rasterizer 407 rasterizes a resolution prominent object at 600 ppi. As described above, the resolution prominent object is a limited monochromatic color object so that the object rasterization can be performed by using a binary value. In this case, an object color is stored in another register or the like. A block processing unit 408 processes 600

ppi object data for each 2.times.2 blocks, and a smooth part of the object data is changed on the color plane 4041 to a drawing image as an application output of 300 ppi data, similar to the gradation prominent object of a normal resolution. If the high resolution rasterization is performed by using a binary value, a chromatic pixel is replaced by object color data separately prepared, and converted into a depth bit of the color plane 4041 to form a drawing image on the color plane 4041. (Col. 4, lines 14-28). A dot pattern coding unit 405 generates a dot pattern code by using a predetermined algorithm, in accordance with the information supplied from the color plane 4041, edge code plane 4042 and edge color plane 4043. If the printer is of an ink jet type, the dot pattern is constituted of a binary value of each YMCK. Since the 2 x 2 dot pattern representations are limited, each dot pattern is determined by an error diffusion method or the like. (Col. 4, lines 40-47). A printer command addition unit 406 processes the dot pattern code created in the above manner so as to allow it to be received by the printer 102, and adds a command. (Col. 4, lines 59-61)

Thus, *Honma* merely discloses a discrimination unit 401 which discriminates whether a drawing is a gradation prominent object or a resolution prominent object and is rasterized either by a high resolution rasterizer 407 or a normal resolution rasterizer 402 (column 3, lines 49-60). Thus, nothing in *Honma* shows, teaches or suggests a detector which detects a specific pattern in data after combining the data converted according to data type as claimed in claims 1, 8, 15 and 16. Rather, *Honma* merely discloses a discrimination unit 401 which discriminates whether a drawing object is a gradation prominent object or a resolution prominent object in order to determine whether the object passes to a high resolution rasterizer or a normal resolution rasterizer (i.e., nothing in *Honma* shows, teaches or suggests

detection of a specific pattern after conversion and combination as claimed in claims 1, 8, 15 and 16).

Additionally, *Honma* merely discloses a drawing object having an attribute indicating a resolution of 600 ppi or 300 ppi (column 3, lines 20-23). Nothing in *Honma* shows, teaches or suggests a converter which converts all of the plurality of different types of input data according to data type as claimed in claims 1, 8, 15 and 16. Rather, *Honma* merely discloses processing data based upon resolution and not based on data types.

Owada et al. appears to disclose an image recognition apparatus and a method for recognizing an image represented by inputted image data. (Col. 1, lines 6-8). An R, G and B digital image signal 1 inputted from a host computer (not shown) or the like is converted to a Y, M, C and K digital image signal 3 by an RF converter 2. The RF converter 2 performs conversion from an R, G and B color space to a Y, M and C color space in addition to UCR processing, masking processing and density conversion (gamma correction) processing for correcting color reproducing characteristics of toner or the like. (Col. 5, lines 25-32). The Y, M, C and K digital image signal 3 outputted from the RF converter 2 is inputted to a printer engine 4 and a conversion table 6 constituted with a look-up table e.g. ROM or the like. The printer engine 4 outputs a printout 5, forming a color image on the basis of image data from the RF converter 2. The digital image data, on which conversion to be described later is performed by the conversion table 6, is inputted to an image recognition circuit 7. The image recognition circuit 7 stores reference data of the R, G and B color space generated based on image data of specified documents. The image recognition circuit 7 determines whether or not an inputted

image is an image of one of the specified documents by performing pattern matching or fuzzy analysis based on the reference data. The determination result is outputted as a signal Det 8. The control unit 21 determines in accordance with the signal Det 8 whether or not the image subjected to printing is the specified document; and if it is determined that the image to be printed is the specified document, printing operation of the printer engine 4 is suspended, or process control e.g. stopping fixing process is performed, or image data is deformed e.g., printing out an all-black image, to impede printing of the exact image of the specified document. (Col. 5, lines 39-62). In the case where the embodiment is applied to the aforementioned storage medium, in a simple description, the storage medium stores modules which realize a process performing at least the inverse processing (such as the inverse RF conversion and an inverse process of the pseudo halftone processing) and the image recognition, shown in flowcharts in FIGS. 15A or 15B. That is, the storage medium stores the modules shown in the memory map in FIG. 16. More specifically, program codes which correspond to "inverse RF conversion" module and "image recognition" module, at least, are to be stored in the storage medium. (Col. 13, lines 55-65)

Thus, *Owada et al.* merely discloses converting data in a converter 2 and then an image recognition circuit 7 determines whether or not the input image is an image of one of these specific documents (column 5, lines 25-53, column 13, lines 55-65). Nothing in *Owada et al.* shows, teaches or suggests a detector detects a specific pattern in data after combination by an image combiner as claimed in claims 1, 8, 15 and 16. Rather, *Owada et al.* teaches away from the claimed invention since the detector 7 performs detection on the data output by the converter 2.

Additionally, *Owada et al.* merely discloses inputting R, G and B digital image signals 1. Nothing in *Owada et al.* shows, teaches or suggests converting all of the plurality of different types of input data according to data type as claimed in claims 1, 8, 15 and 16. Rather, *Owada et al.* merely discloses R, G, B digital image signals are input.

A combination of *Honma* and *Owada et al.* would merely suggest a) replacing the object discrimination unit 401 of *Honma* with the image recognition device 7 of *Owada et al.* or b) to put the image recognition circuit 7 of *Owada et al.* immediately after conversion in *Honma* (i.e., put the image recognition immediately after the color conversion unit 403 in *Honma*). Nothing in the combination of *Honma* and *Owada et al.* shows, teaches or suggests detecting a specified pattern in combined data as claimed in claims 1, 8, 15 and 16. Therefore, applicants respectfully request the Examiner withdraws the rejection to claims 1, 8, 15 and 16 under 35 U.S.C. §103.

Claims 2-7, 9-14, 18 and 20 depend from claims 1 and 8 and recite additional features. Applicants respectfully submit that claims 2-7, 9-14, 18 and 20 would not have been obvious within the meaning of 35 U.S.C. §103 over *Honma* and *Owada et al.* at least for the reasons as set forth above. Therefore, applicants respectfully request the Examiner withdraws the rejection to claims 2-7, 9-14, 18 and 20 under 35 U.S.C. §103.

Claims 17 and 19 were rejected under 35 U.S.C. §103 as being unpatentable over *Honma* and *Owada et al.* and further in view of *Douglass et al.* (U.S. Patent No. 5,542,031).

Applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §103. The claims have been reviewed in light of the Office Action, and for

reasons which will be set forth below, applicants respectfully request the Examiner withdraws the rejection to the claims and allows the claims to issue.

As discussed above, since nothing in the combination of the primary references to *Honma* and *Owada et al.* shows, teaches or suggests the primary features as claimed in claims 1 and 8, applicants respectfully submit that the combination of the primary references with the secondary reference to Douglass et al would not overcome the deficiencies of the primary references. Therefore, applicants respectfully request the Examiner withdraws the rejection to claims 17 and 19 under 35 U.S.C. §103.

Since claims 5 and 11 have been incorporated into the independent claims, applicants respectfully submit that there are no new issues for consideration and search.

Thus it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested. Should the Examiner find that the application is not now in condition for allowance, applicant respectfully requests the Examiner enters this Amendment for purposes of appeal.

If for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is respectfully requested to contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

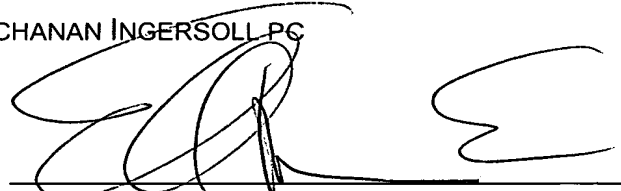
In the event that this paper is not timely filed within the currently set shortened statutory period, applicants respectfully petition for an appropriate extension of time.

The fees for such extension of time may be charged to our Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL PC

A handwritten signature in black ink, appearing to read 'EMAS', is written over a horizontal line.

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Date: April 27, 2006

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